

Appl. No. 10/736,312
Reply to Office action of 06/25/2004

Page 3

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A process for the isomerization of xylenes comprising contacting an aromatics-containing hydrocarbon feed stream with a catalyst system comprising beta zeolite and pentasil MTW-zeolite under isomerization conditions and recovering a product stream comprising a greater amount of para-xylene than in the feed stream and a lesser amount of ethylbenzene than in the feed stream, wherein the amount of para-xylene in the product is at least 90 mol-% of the approach to an equilibrium amount of para-xylene to total xylenes and wherein the conversion of ethylbenzene over the catalyst system is at least 20 mol-%.

Claim 2 (original): The process of claim 1 wherein the catalyst system is contacted under at least partial liquid phase conditions.

Claim 3 (original): The process of claim 2 wherein the at least partial phase liquid conditions include the absence of added hydrogen.

Claim 4 (original): The process of claim 1 wherein the isomerization conditions comprise a space velocity from about 0.1 to about 20 hr⁻¹, a temperature from about 100° to about 400°C and a pressure from about 10 kPa to about 5 MPa absolute.

Claim 5 (original): The process of claim 4 wherein the isomerization conditions comprise a space velocity from about 0.5 to about 10 hr⁻¹, a temperature from about 150° to about 300°C and a pressure from about 100 kPa to about 3 MPa absolute.

Claim 6 (currently amended): The process of claim 1 wherein the catalyst system is essentially free of a hydrogenation metal component by containing less than 0.1 mass-% amount of said metal.

Claim 7 (original): The process of claim 1 wherein the catalyst system further comprises a binder selected from the group consisting of alumina, silica, and mixtures thereof.

Claim 8 (original): The process of claim 7 wherein the binder is alumina.

Claim 9 (canceled)

Claim 10 (original): The process of claim 1 wherein the beta zeolite is a surface modified beta zeolite.

Appl. No. 10/736,312
Reply to Office action of 06/25/2004

Page 4

Claim 11 (original): The process of claim 10 wherein the surface modified beta zeolite results from acid washing of a templated native zeolite.

Claim 12 (currently amended): A process for the isomerization of xylenes comprising contacting a C₈ aromatics containing hydrocarbon feed stream, which comprises ethylbenzene, with a catalyst system comprising a beta zeolite catalyst and a MTW-zeolite catalyst under at least partially liquid phase at isomerization conditions, and recovering a product stream comprising para-xylene, wherein the amount of para-xylene in the product is at least ~~near the equilibrium amount~~ 90 mol-% of the approach to an equilibrium amount of para-xylene to total xylenes and wherein the conversion of ethylbenzene over the catalyst system is at least 20 mol-%.

Claim 13 (original): The process of claim 12 wherein the binder is selected from the group consisting of alumina, silica, zeolites, and mixtures thereof.

Claim 14 (currently amended): The process of claim 12 wherein the beta zeolite catalyst is essentially free of a metal hydrogenation component by containing less than 0.1 mass-% amount of said metal.

Claim 15 (original): The process of claim 12 wherein the isomerization conditions comprise a space velocity from about 0.5 to about 10 hr⁻¹, a temperature from about 150° to about 300°C and a pressure from about 100 kPa to about 3 MPa absolute.

Claim 16 (original): The process of claim 15 wherein the isomerization conditions further comprise the absence of a substantial amount of hydrogen.

Claims 17-31 (canceled)